

PATENT SPECIFICATION

477,799



Application Date : Dec. 22, 1936.

No. 35202/36.

Complete Specification Accepted : Jan. 6, 1938.

COMPLETE SPECIFICATION

An Improved Electrically Operated Tooth Brush

I, RAYMOND CARL ROBINSON, a citizen of the United States of America, residing at Avalon, Protea Road, Claremont, Cape Town, in the Province of the Cape of Good Hope, Union of South Africa, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to an improved electrically operated tooth brush and has for its object to provide a tooth brush operated by an electric motor wherein the whole forms a compact and easily transported article, the brush being capable of removal and replacement at low cost and the unit being designed in such a way that the tooth paste which might otherwise enter the gears and enter the motor is prevented from so doing.

The individual parts constituting my invention are all known parts and I do not claim novelty in any of the individual features of the unit, the invention being limited to the combination of these parts.

According to this invention, I provide an improved electrically operated tooth brush in which the rotating movement derived from a motor situated at some convenient spot is transmitted through the handle of the tooth brush and attachment thereto, the attachment being bent through an obtuse angle to bevel gears situated in a housing at the upper end of the attachment, by means of which bevel gears rotation of the driving shaft in a horizontal plane is converted into a rotation in the vertical plane, wherein the vertical bevel gear is connected by means of a shaft and clip with a circular brush of suitable dimensions which is fitted with a cup facing towards the brush to prevent the entering of impurities, such as tooth paste, into the working parts of the brush.

In one construction in accordance with my invention by improved tooth brush consists of a cylindrical casing which is utilised as the handle. The motor from which the rotating movement is obtained is of ordinary known type operated by electricity and may be situated

within this cylindrical casing or may constitute an independent part situated at any convenient spot in the room, the tooth brush then being connected with the motor by means of a flexible driving shaft carried through the handle to a plug which can be connected with the motor. The cylindrical casing which may be made of any convenient metal or substance contains an extension piece bent in the form of an obtuse angle through which a flexible or rigid driving shaft is led to bevel gears mounted in the housing of the brush which is attached to the extension piece, and by means of which the change of driving direction is effected.

It will be understood that when a rigid shaft is employed, bevelled gearing will be incorporated at the bend position thereof to allow of the alteration of direction of the shaft at that point. To the last bevel gear a further shaft is attached to which the brush itself is attached by means of suitable clip. The brush is fitted with a cup facing away from the mechanical portion of the brush so that any tooth paste which is driven into the brush by the pressure of the brush itself against the teeth is prevented from passing backwards into the bevel gear and thus clogging the gear or driving parts.

In order that my invention may be more readily understood reference is hereby made to the accompanying drawings in which like numerals represent the same parts throughout all the views.

In these drawings Figure 1 sheet 1 shows a general arrangement of the electric tooth brush, in which A is a cylindrical casing which houses the motor B (which can be replaced by a flexible or rigid driving shaft if required driven from an independent motor, through flex C from suitable plug connection). D is an attachment containing a flexible driving shaft E, the lower end of which is square and marked F, this square portion fitting into upper end of motor or driving shaft G (refer also to Fig. 4). The attachment D is bent through an obtuse angle as shown. The upper portion marked H is the housing for internal bevel gears I,

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and a suitable clip J for holding the brush K. This brush is fitted with a cup L which prevents tooth paste etc. from entering housing H and damaging gears.

5 A screwed head P is fitted to lower end of casing A, which is removable if necessary for internal cleaning.

Figure 2 sheet 1 shows a front view of the attachment D, the lower end M of which is split in four, each quarter having a small projecting pad N which springs into annular recess O in casing A (see Figure 4).

Figure 3 sheet 1 shows more clearly this spring effect as described in Figure 2.

Figure 4 sheet 1 shows the spring clip in position, the square end of driving shaft F being shown in position in motor shaft G, which is kept central by running in collar Q, the insertion of the spring clip portion is facilitated by means of a slight counter sink or bell mouth at the upper end of portion A as shown in Figure 4.

25 It will be seen that by my invention I have provided an improved electrically operated tooth brush which is capable of easy manipulation and at the same time can be used at comparatively small cost.

30 In view of the fact that the brush can readily be removed all that is required for the continued operation of the tooth brush is the replacement from time to time of the brush itself which can readily be removed and the replacement of the battery or the provision of electric current to the motor by which the motor is driven. Moreover the brush itself can be varied to

suit individual requirements both as regards its size and as regards the hardness or softness of the bristles of which it is composed. 40

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:— 45

(1) An improved electrically operated tooth brush in which the rotating movement derived from a motor situated at some convenient spot is transmitted through the handle of the tooth brush and attachment thereto, the attachment being bent through an obtuse angle to bevel gears situated in a housing at the upper end of the attachment, by means of which bevel gears, rotation of the driving shaft in a horizontal plane is converted into a rotation in the vertical plane, wherein the vertical bevel gear is connected by means of a shaft and clip with a circular brush of suitable dimensions which is fitted with a cup facing towards the brush to prevent the entering of impurities, such as tooth paste, into the working parts of the brush. 50 55 60 65

(2) An improved electrically operated tooth brush substantially as hereinbefore described and illustrated in the accompanying drawings. 70

Dated this Tenth day of November, 1936.

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[This Drawing is a reproduction of the Original on a reduced scale.]

